

Appendix 5: Full Planting

Objective: To speed up stand regeneration and improve stand quality using improved planting stock. This treatment requires site preparation prior to planting (exception: see Trial Project below). In most cases, a herbicide treatment is required soon after planting to control competing hardwood and herbaceous vegetation. This treatment is only recommended where desirable natural regeneration does not quickly establish itself after harvesting.

Pre-Treatment Assessment:

- Harvesting method and layout: Since harvesting creates the forest planting site, harvests should be designed with cost-effective site preparation, planting and herbicide release in mind. Harvesting and site preparation should avoid seasonally wet, dry or otherwise low productivity areas. Use smooth boundaries and avoid excessive slash.
- Planting must not occur within ELG regulated set-backs/buffers where herbicide release treatment is not permitted.
- Stocking: must be $\leq 40\%$ of all acceptable softwood natural regeneration (using 1.26 m radius (5 m²) plots where one "in" tree represents stocked).
- Planting opportunities: Must have sufficient planting opportunities to accommodate $\geq 90\%$ stocking.
- Remnant overstory: less than 25% crown closure (8 m² residual basal area)
- Harvested Tolerant Hardwood and Tolerant Hardwood-Softwood sites (pre-harvest stand types) will not be treated.
- *Trial Project* – Full Planting without Site Preparation: This trial treatment is suited for sites that have been harvested full tree to roadside (ex. full tree chipping), leaving a minimal amount of slash on site. A different rate will apply (see Table 1). The following conditions apply:
 - The duff layer shall be disturbed leaving adequate planting opportunities which will allow planters to get seedling roots into mineral soil with ease.
 - Site must be planted as soon as feasible after harvesting to avoid seedling competition with weed and shrub species that establish within the first growing season.

Post-Treatment Inspection:

- Site: the site must not be excessively wet.
- Species: Planted seedlings must be native commercial softwood species and/or Norway spruce. Multiple species are acceptable. Seedling species must be appropriate for the site to optimize growth. Wild seedling transplants are not acceptable.
- Stocking: must be $\geq 90\%$ stocking of planted trees.

- Density: 1,800 - 2,500 planted seedlings/ha for forest sites, and 1,800 - 3,000 for farm land sites (using 3.57 m radius (40 m²) plots where 1 “in” tree represents 250 trees/ha)
- Quality: A planted seedling is considered meeting requirements if all the following criteria are satisfied (using 3.57 m radius (40 m²) plots):
 - Alive or estimated to have been alive when planted.
 - Firmly imbedded to the root collar.
 - Roots/planting plug must have mineral soil contact; No exposed roots; Not “J” rooted.
 - Not broken below the top whorl.
 - Multiple stems are counted as one.
 - located on an acceptable planting opportunity.
- Sampling: stocking and density plots must share the same plot centre. Plot intensity shall be greater of 1 plot per ha or 4 plots per work area.
- Voids: All untreated areas larger than 0.04 ha are considered voids and will be deducted to calculate net treated area. All voids 0.5 ha and larger are to be mapped. When measuring voids, a growing space of 1 m is allowed around crop trees.
- Natural Regeneration: will not include the following:
 - Layering,
 - Seedlings with over 25% of circumference of stem girdled,
 - Seedlings with a live crown ratio of less than 20%,
 - Advanced stunted fir regeneration; this is advanced regeneration present following harvest. Generally, this refers to trees over one metre in height with short “umbrella” shaped crowns exhibiting very poor annual growth.
- Moisture Conditions: Boards are encouraged to monitor planting site moisture conditions daily, and to consider cessation of planting activity when sites become sufficiently dry to jeopardize seedling survival.

Boards are encouraged to view two key components of the Fire Weather Index: The Drought Code (DC) and the Buildup Index (BUI) at: https://www2.gnb.ca/content/gnb/en/news/public_alerts/forest_fire_watch.html. **DC > 300**, and **BUI > 55** have been identified as critical levels above which higher than normal seedling mortality rates may be expected.

In addition, daily precipitation should be monitored since acceptable Drought Codes can result from high humidity while soil moisture remains insufficient for seedling survival. To view daily precipitation, visit: <http://www1.gnb.ca/0079/FireWeather/FireWeatherHourly-e.asp?Stn=all>

- Seedling Care: Boards are responsible to ensure staff/contractors/owners are aware of and follow ERD best management practices for seedling care.